

### **Amendment to the Claims**

This listing of Claims will replace all prior versions, and listings, of claims in the application.

### **Listing of Claims**

1. (Currently Amended) A substrate adapted for selective micron and nanometer scale deposition, the substrate having;

a support;

a conductive layer on the support;

a dielectric layer of a material which will hold an electrostatic charge, the dielectric layer disposed on the conductive layer; and

a chemically functional layer on the dielectric layer, the chemical functional layer providing a protective layer for the dielectric layer and a chemically reactive surface for compounds deposited on the surface;

whereby the substrate is capable of having electrostatic charge patterns ~~may be~~ formed in a predetermined manner ~~upon or in the substrate~~ thereupon or therein.

2. (Original) A substrate as in Claim 1 wherein the support is selected from the group comprising a metal, glass, ceramic, or polymeric material and the support is clear or opaque and flexible or rigid.

3. (Original) A substrate as in Claim 1 wherein the conductive layer is combined with the support.

4. (Original) A substrate as in Claim 1 wherein the conductive layer is a very thin

layer and is transparent.

5. (Currently Amended) A substrate as in Claim 1 wherein the conductive layer ~~conductive layer~~ is vacuum-deposited onto the support.

6. (Original) A substrate as in Claim 1 wherein the conductive layer is selected from the group comprising a sputtered layer of metal or indium tin oxide, or a carbon nano-tube layer.

7. (Currently Amended) A substrate as in Claim 1 wherein the dielectric layer is comprises a material selected from the group ~~comprising~~ consisting of a glass, a polymeric resin and a methylmethacrylate (MMA).

8. (Currently Amended) A substrate as in Claim 1 wherein the dielectric in the dielectric layer ~~is~~ comprises a photoconductor.

9. (Currently Amended) A substrate as in Claim 8 wherein the photoconductor is selected from the group comprising zinc oxide, cadmium sulphide, lead sulphide, lead selenide, amorphous selenium, doped selenium, alloys of selenium including selenium-tellurium, selenium-arsenic, organic photoconductive materials ~~including polyvinylcarbazole (PVK) and complexes of polyvinylcarbazole sensitised with trinitrofluorenone.~~

10. (Currently Amended) A substrate as in Claim 1 wherein the chemically functional layer ~~is~~ comprises a material selected from the group ~~comprising~~ consisting of

a silane polymer, silicon dioxide, silicon nitride ( $\text{Si}_x\text{N}_y$ ), titanium dioxide, ~~Tyzer~~<sup>TM</sup> organic titanates and zirconates, cross-linked or partially cross-linked epoxy novolac resins, polymerised oligomers, cross-linked resins, functionalised parylene (a polymer of di-para-xylyene), acrylates and methacrylates which may include functional groups, multi-functional acrylates and methacrylates, and monomers which have been crosslinked with a photoinitiator.

11. (Currently Amended) A substrate having;

a support;

a conductive layer on the support;

a photoconductive layer of a material which is adapted to have an electrostatic charge thereon selectively dissipated upon receiving incident radiation, the photoconductive layer disposed on the conductive layer; and

a chemically functional layer on the photoconductive layer, the chemical functional layer providing a protective layer for the photoconductive layer and a chemically reactive surface for compounds deposited on the surface;

whereby the substrate is capable of having electrostatic charge patterns ~~may be~~ formed in a selected array ~~upon the substrate~~ thereupon to influence the movement of charged droplets in a liquid medium on the substrate.

12. (Currently Amended) A substrate adapted for manufacture of DNA arrays, the substrate having;

a support;

a conductive layer on the support;

a photoconductive layer of a material which is adapted to have an electrostatic

charge thereon dissipated upon receiving incident radiation, the photoconductive layer disposed on the conductive layer; and

a chemically functional layer on the photoconductive layer, the chemical functional layer providing a protective layer for the photoconductive layer;

whereby the substrate is capable of having electrostatic charge patterns ~~may be~~ formed in a selected array ~~upon the substrate thereupon~~ to influence the movement of charged droplets in a liquid medium on the substrate;

the chemically functional layer comprising at least in part a chemically active material to which a ~~binder~~ molecule can be attached, the molecule being selected from the group consisting of a binder molecular and a binder molecule with at least one DNA oligomer joined thereto, whereby the substrate is capable of having a selected electric charge pattern ~~may be~~ generated ~~upon the substrate thereupon~~ by incident radiation to enable selective chemical de-protection of the binder ~~molecules~~ molecule or the at least one DNA oligomers oligomer already joined to a the binder molecule ~~and application of nucleotides to selected binder molecules or to DNA oligomers already joined to a binder molecule~~.

13. (Currently Amended) A substrate adapted for manufacture of DNA arrays, the substrate having;

a support;

a conductive layer on the support;

a photoconductive layer of a material which is adapted to have an electrostatic charge thereon selectively dissipated upon receiving incident radiation, the photoconductive layer disposed on the conductive layer; and

a chemically functional layer on the photoconductive layer, the chemical functional layer providing a protective layer for the photoconductive layer;

whereby the substrate is capable of having electric charge patterns ~~may be~~ formed in a selected array ~~upon the substrate~~ thereupon to influence the movement of charged droplets in a medium on the substrate; the chemically functional layer providing a surface to which a binder molecule can be attached.

14. (New) A substrate as in Claim 9 wherein the organic photoconductive materials comprise polyvinylcarbazole (PVK) or complexes of polyvinylcarbazole sensitised with trinitrofluorenone.